



UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

REPLY TO ATTENTION OF.
5HR-13

SEP. 24 1984

Mr. Sam McWilliams
Plant Manager
Ethyl Corporation
Edwin Cooper Division
Sauget, Illinois 62201

Dear Mr. McWilliams:

This letter is in response to your June 25, 1984, letter which included a proposal for elements of a remedial investigation pursuant to Administrative Order V-W-84-007, signed May 17, 1984, by the acting Regional Administrator, Robert Springer.

I have reviewed your June 25, 1984, letter and would like to respond to the proposals set forth in your letter. Your proposals addressed the tasks identified in paragraph 12C of the Administrative Order. I have indicated below the task (i through iv) and my response to it.

Task i & ii) Much of the sampling indicated in your proposal to determine whether 2,3,7,8 TCDD exists in the soil at the Sauget facility has been done. To date, results of four sampling efforts are available. From these results, it is apparent that soil in at least two areas of the facility (i.e. near Unit 268 and near the black tanks T-122 through T-126 as identified in Drawing No. D-21880) has been contaminated with 2,3,7, 8 TCDD to above 50 parts per billion (ppb). In addition, the soil in these locations is contaminated to well over 50 ppb at depths of eighteen inches. Soil samples taken from locations adjacent to these highly contaminated areas indicate that contamination of soil above 1 ppb exists at considerable distances from the highly contaminated areas.

At this time, it is apparent that soil samples at depths below eighteen inches is necessary. I agree with your proposal to take core samples to a depth exceeding the highest seasonal water level underlying facility and to segment samples into 6 inch lengths and analyze alternate segments for 2,3,7,8 TCDD.

Your proposal under Task ii to use the presence (or absence) of 2,3,7,8 TCDD contamination below the highest seasonal water level underlying the facility as a "trigger" for a geological and hydrological study is strongly related to the goals of Task i. I am concerned about the possibility of 2,3,7,8 TCDD contamination of soils at or below the ground water table. For this reason,

I believe that determination of vertical extent of contamination should be determined expeditiously. In addition, if 2,3,7,8 TCDD is detected at or below the highest seasonal water level, some groundwater monitoring wells will need to be installed to determine the extent (if any) of groundwater contamination of 2,3,7,8 TCDD. In the event that the 2,3,7,8 TCDD is found near the highest seasonal water level, U.S. EPA will evaluate the need for groundwater monitoring wells. In order to avoid delay of the installation of monitoring wells due to cold weather, the determination of vertical contamination should be made sufficiently before the advance of colder weather.

U.S. EPA will require characterization of the lateral and vertical extent of 2,3,7,8 TCDD contamination in solids to 1 ppb at a detection limit of 0.3 ppb. In order to accomplish this in an efficient manner, several iterations of sample collection and analysis may be used. The results of such iterations can be used to guide the planning of subsequent iterations. Regardless of the number of iterations employed to complete the task of characterization, the characterization to 1 ppb must be completed by September 30, 1985.

In the event that a relationship exists between the depth of a sample and the corresponding sample results complete vertical characterization may not be required. Whether or not a complete vertical characterization will be required will depend upon the relationship of 2,3,7,8 TCDD sample values with the depth of sample. If sample values decrease with depth in such a way that U.S. EPA concludes more extensive sampling and analysis is not necessary, a limited characterization may be possible. If sample values vary with depth in an anomalous manner complete vertical characterization will be necessary.

I have developed a sampling plan which can serve as a first iteration toward the fulfillment of Task i. This plan includes depth samples at previous sampling locations and several new locations. By superimposing depth sampling at previous locations, a characterization can be made without duplicating the sampling at previously sampled depths. This plan should provide a basis for deciding how may subsequent efforts need to be made. I have indicated the sample locations on the drawing identified as Attachment 1. Attachment 2 contains specific information regarding sample depth.

Task iii) The proposal to identify and locate sewer lines, buried pipe, and equipment which may be contaminated with 2,3,7,8 TCDD, is acceptable. It appears, however, that throughout your letter you have made an attempt to define the extent of contamination with a fixed number of samples. As an example on page 4, paragraph 3 of the proposal, you state, "... a downgradient sample will be taken in the sewer line to determine the extent of the contamination." Although one down-gradient sample may determine the extent of contamination to a given level, it may very well not. At this time, I don't believe that a realistic number of samples can be identified for a characterization. It is for this reason that I suggested the approach set forth in the attachments.

Task iv) You have proposed to use a U.S. Geological Survey map (7.5 minute map) for Task iv. I do not believe this map would be adequate for use in determining hydraulic gradients at your facility necessary to provide surface runoff information. The topographic map used for determining such gradients should indicate elevation differences of one foot.

The objectives and completion dates for the tasks identified under paragraph C of the order are identified below;

<u>R/I Objective</u>	<u>Completion Date</u>
Task i) Characterize the extent of 2,3,7,8 TCDD contamination on site to 1 ppb laterally (surface) and vertically to 1 ppb at a detection limit of at least 0.3 ppb.	September 30, 1985
Task i & ii) Determine the vertical extent of contamination to 1 ppb in the Unit 268 area and the black tank area as previously described in this letter.	November 15, 1984
Task iii) Complete plans for identifying and locating all used and unused sewer lines, buried pipe and equipment which may be contaminated with 2,3,7,8 TCDD.	October 15, 1984
Task iv) Complete topographic map which identifies 1 foot differences in elevation.	March 15, 1985
Determine the highest seasonal water level underlying the facility.	November 1, 1984

Any subsequent proposals made regarding the manner in which the above tasks are conducted will be evaluated according to the likelihood of completing the tasks by the dates indicated above. In addition to characterizing the extent of 2,3,7,8 TCDD contamination, several samples should be analyzed for other contaminants which may pose health risks.

As set out in paragraph D of the order, you have the opportunity to confer with EPA regarding your proposal and my comments before EPA issues a formal approval of the proposed plan with modifications or additions. To arrange a date for a conference please contact me at (312) 886-0408.

Sincerely,



Dan Hopkins, On-Scene Coordinator
Remedial Response Section II

cc: David Bach, Ethyl Cooperation
James Sparks, Edwin Cooper Division

Attachment Two

For each sample location identified by a circled letter in attachment one, the following chart lists (1) the approximate depth of the last sample to be taken and (2) whether the location indicated has been previously sampled. Samples should represent a six inch segment of soil. Samples should be collected from alternate 6 inch segments in a core. For example, there would be 5 samples from a five foot core (i.e. 0-6 inches, 12-18 inches, 24-30 inches, 36-42 inches, 48-54 inches) unless previous sampling has occurred at that location. If previous samples have been analyzed and reliable values for 2,3,7,8 TCDD concentrations have been determined, sampling and analysis at specified depths need not to be duplicated.

<u>Sample Description</u>	<u>Depth of Core</u>	<u>Location of Previous sampling</u>
A	5 ft	Yes
B	5 ft	Yes
C	5 ft	Yes
D	5 ft	Yes
E	18 inches	Yes
F	3 ft	Yes
G	18 inches	Yes
H	3 ft	No
I	3 ft	Yes
J	18 inches	No
K	18 inches	No
L	3 ft	No
M	18 inches	No
N	18 inches	No
O	3 ft	No
P	18 inches	Yes
Q	18 inches	No
R	18 inches	No

(21)

Attachment Two (cont'd)

<u>Sample Description</u>	<u>Depth of Core</u>	<u>Location Previous sampling</u>
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S	18 inches	Yes
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T	6 inches	No
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U - Sample U should be a composite of five cores. Each core should be segmented as described above and the respective depths from each should be composited into one sample. In this way, the area will be described by 5 samples each of which will be different depth.